

The Judging Manual



The
HOLSTEIN-FRIESIAN ASSOCIATION
OF AMERICA

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The Judging Manual

Containing

Score Card for Holstein-Friesian Cattle

*As Revised by the Committee on Type
and Adopted by*

The Holstein-Friesian Ass'n of America
1923

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The Foster Mother of the World

HE cow is a most wonderful laboratory. She takes the grasses of the pasture and roughage of the field and converts them into the most perfect food for man. In that food there is a mysterious something which scientists have found essential to the highest health of the human race, and which can be found nowhere else. Men have sought for centuries the fabled Fountain of Youth. The nearest approach to that fountain which has yet been discovered is the udder of the cow. Without her milk, children languish, the vigor of the adult declines, and the vitality of the human race runs low.

*Frank O. Lowden,
Sinnissippi Farm,
Oregon, Illinois.*

Introduction

To formulate and give concrete expression to the true type of the Holstein-Friesian breed and to revise the score card or official Scale of Points and make it of greater value in teaching the true type—these were the main considerations prompting the appointment of a “Committee on the True Type of the Breed.” The subject is of the most far-reaching importance in the future development of the Holstein-Friesian industry and this fact has been constantly in the minds of the members of the Committee throughout their earnest and painstaking considerations of it during the past twelve months.

The movement had its inception at a conference called in Philadelphia by the Committee on Prizes at Fairs and the Executive Committee of The Holstein-Friesian Association of America in March, 1922, at the time of the Brentwood Sale. About forty men, who were especially interested in the problems of the show ring, were present and participated in the preliminary discussion. At this meeting, the foundation for the work was laid and the importance of preparing paintings or lantern slides and clay models representing the true type of the breed was developed. The task of working out the problem was assigned to this special committee which was appointed by the Executive Committee with full authority to proceed.

The first task of the Committee was to harmonize the ideas of its own members as to the exact details of ideal conformation. This proved to be a simple problem compared with that of giving visual and permanent expression to those ideas. Invaluable service along this line was performed by the noted artists, Edwin Megargee, painter, and Gozo Kawamura, sculptor, who were commissioned to do the work under the close supervision of the Committee.

On May 18, 1922, a meeting of the Committee was held at Pabst Stock Farm, and after a study of live animals in a number of famous Waukesha County herds

and with the aid of photographic material carefully selected by the Committee, the preliminary models and paintings were outlined. The work was continued at Kansas City during the week of the Annual Convention and much progress was made toward its completion. Throughout the fall show season further careful study of the prize-winning animals was made by the members of the Committee. At the 1922 National Dairy Show the whole Committee, with the artists, carefully studied all of the outstanding animals there exhibited, and the painstaking comparisons thus made, when translated upon the canvas and into the clay models, contributed to a result at once life-like and faithful in every detail. The paintings and models in their practically complete form were exhibited to the public at the Show and excited general admiration and approval. A further meeting of the Committee was held in New York City November 20, 1922, at the studios of the artists, where the final touches were completed and the unanimous approval of the Committee was given to the work of both artist and sculptor.

Meetings of the Committee to consider revision of the Scale of Points in order that it might express as accurately as possible the true type of the breed in accord with the paintings and models, were held during the spring and summer of 1923.

The procedure of the Committee from the outset is here recorded in detail to demonstrate that theirs has been no perfunctory task. It has commanded the serious study and the best thought and judgment of men who are qualified by experience, training, and natural ability to pass an authoritative opinion in these matters. Their conscientious and skillful work is clearly reflected in the finished product—the models, the paintings, and the new Scale of Points. In the hands of breeders, teachers and students, these cannot fail to exert a powerful influence in promoting better knowledge of the true Holstein-Friesian type and with this clearer understanding will naturally come greater success in approximating the ideal in the animals produced. The work of the Committee on the True Type of the Holstein-Friesian Breed is one of the biggest and most far-reaching and constructive things our Association has yet undertaken for the improvement of the breed.

The Holstein-Friesian Cow

A Vital Economic Unit

WHEREVER dairying becomes the prevailing method of farm operation the invariable predominance of the Holstein-Friesian is indicated both on the landscape and by dairy statistics. Particularly is this irrefutable in sections where the products of field and meadow are marketed **directly** through the medium of the dairy cow.

According to the 1920 census purebred and registered dairy cattle of all breeds in the United States totaled 916,000 head. Of this number 58 per cent or 528,000 head are registered in The Holstein-Friesian Association of America. The remaining 42 per cent is made up largely of other recognized dairy breeds—the Jersey, Guernsey, Ayrshire and Brown Swiss. The superior efficiency of the Holstein-Friesian as a breed is reflected in this numerical advantage.

The advantage refers to purebreds only, but what of the grades? In this field of improvement the Holstein-Friesian sire is wielding proportionately as great an influence upon the production of grade cows on dairy farms and in commercial dairies throughout the country. Reducing this influence to percentages, it is estimated that 75 per cent of the market milk consumed in the United States is produced by cows carrying Holstein-Friesian blood. The use of the registered Holstein-Friesian sire has become so general in cheese, condensary and market milk sections that the Black and White predominates to the virtual exclusion of other breeds. The demand from the newer and more rapidly developing sections has been so partial for Holstein-Friesians that the breeding and developing of grade cows for the commercial market has been greatly encouraged. In herds so operated the profits from dairy farming have been stimulated.

The breed's unabated increase in popularity is further evidenced by, and finds justification in, the work of cow testing associations. Their records indicate that where purebred sires have been used upon nondescript cows the progeny shows a marked increase in production, accentuated with each succeeding cross of Holstein-Friesian influence.

Authenticated records compiled for the various breed associa-

tions by agricultural colleges indicate convincingly the remarkable powers in milk and butterfat production that have been developed in this breed. In all breeds of the United States and Canada there are only 104 cows that have produced 1,000 pounds of butterfat in a year; 85 of this number are purebred Holstein-Friesians. The remarkable production of 30,000 pounds of milk in a year, an average of 82 pounds per day, has now been reached by 57 cows of this breed. The advance in the possibilities of production increases is again evidenced by the fact that, a few years ago, it seemed an impossibility to obtain 100 pounds of milk from a cow in one day, whereas, we now have reached the mark where a representative of this breed has averaged over 100 pounds a day for the entire year.

The vital economic position of the Holstein-Friesian cow is suggested by her numerical superiority and her national adoption—the resultant of efficient performance.

The Value of a Study in Type.

The mission of the Holstein-Friesian cow is a service to humanity in the persistent and economical production of a large quantity of milk and butterfat, and to transmit this ability to her offspring. The ideal conformation is, therefore, that form which gives outward indications of unmistakable ability to produce, and possesses the physical powers to support a great production year after year. That is characteristically Holstein-Friesian.

Type is inseparable from production. Men who are to achieve success in the evolution of great producing specimens must themselves become students of type and breeding. The production standard type is as truly the show standard as is the show standard the producing type. This statement is supported by the production records which invariably accompany mature cows into forward positions in great shows, as well as the freedom from disappointment which results in the ultimate development and performance of immature animals that are so elevated on type indications. True, cows of ungainly form will occasionally astonish the world with their tremendous records, but the infallible rule is that such cows are short-lived through lack of constitution, or their udder shape and suspension will not stand the wear of years.

A man to enduringly serve the breed must have a correctly

defined ideal toward which to work and utilize selective methods of breeding and mating in supplanting undesirable traits or deficiencies in conformation with the preferable. Success can be accurately gauged, through the approach toward the ideal in conformation and the uniformity in production which must result therefrom. Each breeder's case or problem is individual and deserves special study. To use proper selection in introducing influences through the sire, one must have an accurate recognition of the deficiencies in form and performance which are to be corrected through these better influences. Breeding to eliminate undesirable traits and establish in their stead the commendable is the only method which will distinguish one's efforts as constructive. How to achieve this success can be found in a study of the methods employed by many who have contributed generously to breed improvement. Certain it is that it cannot be acquired through the mating of production to production without equal consideration being given to conformation. A genuine improver is one who studies methods of breeding in their relation to proper type. To attempt to breed constructively without becoming a student of type is comparable to sailing the seas without a chart.

Once all breeders give this matter the study it deserves and permit these methods of breeding to function for generations, acceptable conformation will never fail to develop satisfactory production.

It is to guide the student of type that this booklet is issued.

Type.

The Resultant of Work Performed.

The fitness of an animal to perform a definite work is fundamentally dependent on its conformation. The pointer dog, together with its special instinctive qualities, carries an outline of head, body and limb to fit it for hunting. The same instinctive qualities and endless training could never make a good pointer out of a bulldog. Neither could grit, determination and ceaseless training make a good fighter out of a dog constructed along the lines of a pointer. Whether we take the American Saddle or the drafty Percheron, the mutton producing Southdown or the wool producing Merino, the milk producing Holstein-Friesian or the beef producing Hereford we have breeds belonging to the same class

THE HOLSTEIN-FRIESIAN



**A particularly coarse animal lacking in the essential points of the score card.
An undesirable type throughout.**

of live stock, but their conformations have become distinctly individual to particularly fit them to perform their definite work. The fitness to do the work is indicated in the conformation of the animal.

Uniform large size, great digestive capacity, robust constitutions, large bony framework, supported by strong muscular development are outstanding features of the Holstein-Friesian breed.

The resultant type in this breed is due to the work the animal itself has performed or is performing, and partly the resultant of selection, which, tracing it back, is the resultant of the work its ancestors performed. A careful study of this development of conformation brought about in each succeeding growing year is important in a study of type. The extreme muscular development in the crops, along the shoulder, the back and the loin, in the yearling tends to disappear as the heifer comes in milk as a two-year-old. The mammary veins during the first lactation are only indications of what they will become when the animal matures, if she is properly fed and developed. Each pregnancy tends to change the body conformation and to increasingly define characteristics indicated in the head and neck. The close association between the production of milk and the reproduction of young



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EDWIN MEGARCEE
1922

HOLSTEIN-FRIESIAN COW
True Type

makes it probable that each time the cow is milked the maternal qualities are brought out more clearly.

By selecting animals "milky" in appearance for mating with those of similar conformation we have in the resultant cross an offspring that carries definite type due to the selection that has been practiced.

The Scale of Points.

Its Application and Its Limitations.

The Scale of Points is the "true type" expressed in words and figures. It assigns a percentage value to each portion of animal structure in proportion to their relative importance to function. One hundred per cent represents the conception of the perfect animal, as depicted in the "true type" paintings and models.

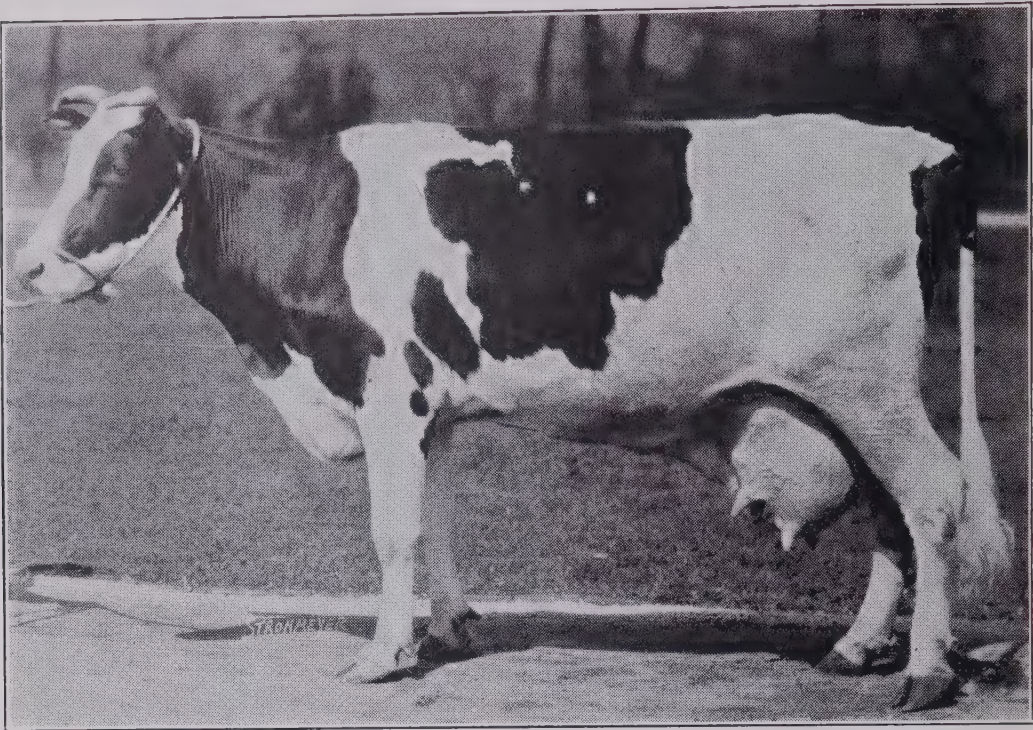
The purpose of the score card is, primarily, to serve as a method of instruction in form and characteristics. It is to live stock judging what a feeding manual is to live stock feeding. In the application three different steps occur:

First, there must be definitely fixed in mind an image of the "true type" of the breed, age and sex considered. Without a true conception of the ideal it is impossible to appreciate adequately the points of merit or to locate various defects.

Second, the score card must enforce systematic observation in detail. It substitutes minute study for general observation. By allotting a definite number of points to each anatomical division on the score card and making deductions in relation to the deficiency which exists, an analytical valuation of merit is made. The student not only becomes familiar with the desirable and the undesirable, but learns to appraise the degree of imperfection or the approach toward perfection. In descriptive terms the score card serves to build up a terminology which becomes general usage and enables the person studying same to better impart information on type to others. To develop the art of comparative judging one must accurately, systematically and minutely analyze the individual subjects.

The third and final step is the weighing of merits and defects, known as the balancing of points. To properly compare animals the judge must know the comparative value of parts, accurately estimate the degree in which the defects are found and weigh the extent to which these defects are counterbalanced by desirable

THE HOLSTEIN-FRIESIAN



An example of poor body structure. Narrow chest, lack of constitution, lack of capacity, limit the term of productive usefulness. Note her broken-down udder. She was an excellent producer as a heifer, but in later years was never able to equal her two-year-old performance. A good example of the result of poor body conformation.

conformation of characteristics elsewhere. The ability to properly balance this valuation distinguishes the successful judge, and is, in fact, the art of judging.

In judging Holstein-Friesians in the ring the score card serves only in a general way, more applicable to the student than to the seasoned judge. Experienced judges will make their placings according to an arbitrary comparison of the various parts of the different animals, without definitely scoring each or assigning a certain number of points. This could occur—an animal very deficient in some one part, although nearly perfect elsewhere, might be placed below another, that, without being perfect in any particular, is reasonably good all over, whereas by a strict application of the Scale of Points the first mentioned animal would score the higher. A frequently found case illustrating that the score card cannot always be accepted as a hard and fast rule in show ring work is that of a cow with excellent development of dairy qualities, but with fore attachment of udder badly broken away. This condition would give her a low rating in almost any good class of

cows, while the total score possible to deduct on faulty udder is not sufficiently large to make her a low-scoring animal.

The general appearance of the animal should be symmetrical and pleasing. Deduction for lack of these characteristics up to 10 points may be made from the general score of the parts.

The question is often asked, "What is meant by 'large, medium and small'?" The weights of Holstein-Friesian cows that have been in milk four to six months and are kept under just good dairy-farm conditions, should be from 1200 to 1350 pounds. These may be classed as medium weights, and weights above or below these figures, as large and small respectively. The mature Holstein-Friesian bull should weigh not less than 2000 pounds; from 2200 to 2400 pounds is much more desirable. These weights are considered as applying to bulls in just good breeding form.

The score card was formerly used to some extent by the various breed associations in estimating the value of an animal, and its particular score, as well as the name of the official doing the work, was published and used in advertising. With higher development of the country and state fairs and other institutions that have been instrumental in establishing a general conception of correct conformation, this work has been discontinued.

Color Markings

While we are striving to retain the characteristics which have made this breed well known as the leader of dairy breeds, and while we are endeavoring in all ways to attain still greater perfection, we must not lose sight of the fact that beauty of color markings has a marketable value and an important bearing upon our future.

The color markings of this breed constitute one of its many attractive features. Beauty of form and beauty of color markings are valuable assets in an animal. Our predecessors wisely determined that cattle, to be eligible for registry, should be black and white, but did not limit the proportions or placing of the spots. Time and observation have determined that cattle of inferior blood, or those possessing an infusion of other blood, often disclose their blood lines through their color markings, and the markings of many of the so-called grade cattle are distinctive and easily recognized by the experienced breeder. These considerations and others, not tending at all towards a fad in color markings, have led to the establishment of the rule concerning color markings that bar registry. Reference is made to the By-Law on the subject.

THE HOLSTEIN-FRIESIAN

Scale of Points for Mature Holstein-Friesian Bull

PARTS	DESCRIPTION	Score
Forehead.....	Broad between the eyes; dishing.....	2
Face.....	Of medium length; clean cut; masculine; the bridge of the nose straight	1
Muzzle.....	Broad, with strong lips; nostrils large and open; jaws strong...	3
Ears.....	Of medium size; of fine texture; well carried.....	1
Eyes.....	Large; full; mild; bright.....	2
Horns.....	Short; of medium size at base; gradually diminishing towards tips; inclining forward; moderately curved inward.....	1
Neck.....	Long, well crested; fine and clean at junction with the head; strongly and smoothly joined to shoulders.....	5
Shoulders....	Of medium height; of medium thickness, smooth and rounding over tops; broad and full at sides; smooth over front.....	6
Crops.....	Full; level with shoulders.....	6
Chine.....	Straight; strong; broadly developed, with open vertebrae.....	5
Loin and Hips.	Broad; level or nearly level between hipbones; level and strong laterally; spreading from the chine broadly and nearly level; the hipbones fairly prominent.....	9
Rump.....	Long; broad; nearly level laterally; full above the thurls; carried out straight to tail head.....	8
Pinbones.....	Wide between; nearly level with hips.....	2
Thurls.....	High; broad through.....	2
Tail Head and Tail.....	Strong at base without coarseness; the setting well back; tail long, tapering finely to a full switch.....	2
Chest.....	Deep; wide; well filled and smooth in the brisket; broad between the forearms; full in the foreflanks.....	7
Barrel.....	Long; deep; well rounded; strongly and trimly held up.....	9
Flanks.....	Deep; full.....	2
Thighs.....	Wide; deep; straight behind; wide and moderately full at the outsides; open, well cut out in the twist; with escutcheon well defined	5
Mammary Veins.....	Large; long.....	5
Rudimentary Teats.....	Well placed forward of scrotum.....	3
Legs.....	Medium length; clean; nearly straight; wide apart; firmly and squarely set under the body; arms wide, strong and tapering..	4
Hair and Hide.....	Hair healthful in appearance; fine and soft; hide of medium thickness; mellow and loose.....	10
		100

JUDGING MANUAL

Scale of Points for Mature Holstein-Friesian Cow

PARTS	DESCRIPTION	Score
Forehead	Broad between the eyes; dishing.....	2
Face	Of medium length; clean cut; feminine; the bridge of the nose straight	1
Muzzle	Broad, with strong lips; nostrils large and open; jaws strong...	3
Ears	Of medium size; of fine texture; well carried.....	1
Eyes	Large; full; mild; bright.....	2
Horns	Small; tapering finely towards the tips; set moderately narrow at base; inclining forward; well curved inward.....	1
Neck	Long; fine and clean at junction with the head; evenly and smoothly joined to shoulders.....	3
Shoulders	Slightly lower than the hips; smooth and rounding over tops; moderately broad and full at sides.....	3
Crops	Full; level with the shoulders.....	5
Chine	Straight; strong; broadly developed, with open vertebrae.....	4
Loin and Hips ..	Broad; level or nearly level between the hipbones; level and strong laterally; spreading from chine broadly and nearly level; hipbones fairly prominent.....	6
Rump	Long; broad with roomy pelvis; nearly level laterally; full above the thurls; carried out straight to tail head.....	6
Pinbones	Wide between; nearly level with hips.....	2
Thurls	High; broad through.....	2
Tail Head and Tail	Strong at base without coarseness; the setting well back; tail long, tapering finely to a full switch.....	2
Chest	Deep; wide; well filled and smooth in the brisket; broad between the forearms; full in the foreflanks.....	6
Barrel	Long; deep; well rounded; strongly and trimly held up.....	9
Flanks	Deep; full.....	2
Thighs	Wide; deep; straight behind; wide and moderately full at the outsides; twist well cut out and filled with development of udder; with escutcheon well defined.....	2
Mammary Veins	Large; tortuous; entering large orifices or double extension; with additional developments, such as branches and connections entering numerous orifices.....	8
Udder	Capacious; flexible; quarters even and of uniform texture; filling the space in the rear below the twist; extending well forward; broad and well attached.....	14
Teats	Well formed; plumb; of convenient size; properly placed.....	4
Legs	Medium length; clean; nearly straight; wide apart; firmly and squarely set under the body; arms wide, strong and tapering..	4
Hair and Hide	Hair healthful in appearance; fine and soft; hide of medium thickness; mellow and loose.....	8
		100

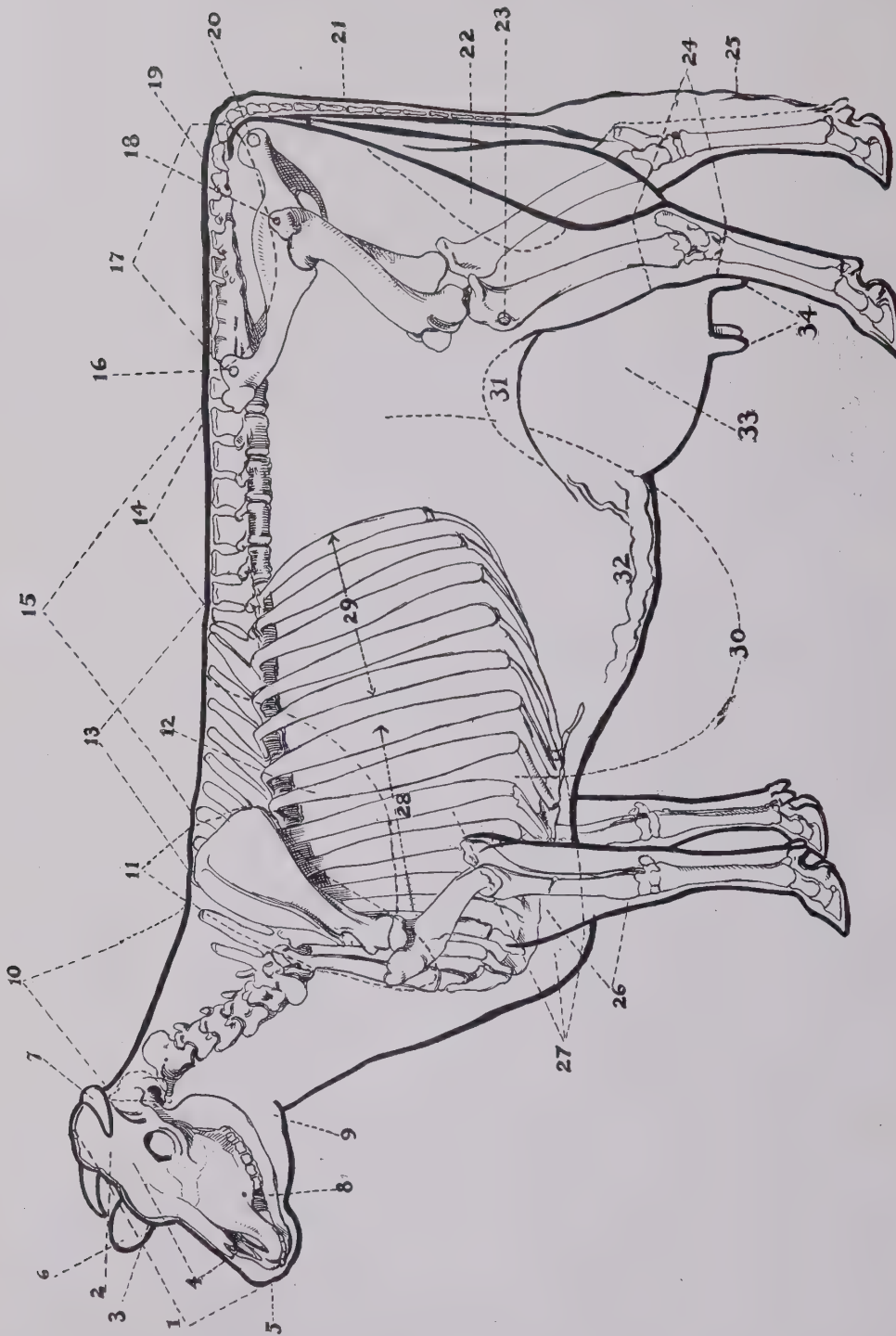


Diagram Showing Parts of the Holstein-Friesian Cow

- 1—Head; 2—Forehead; 3—Eye; 4—Face; 5—Muzzle; 6—Ear; 7—Horn; 8—Jaw; 9—Throat; 10—Neck; 11—Shoulder; 12—Crops; 13—Chine; 14—Loin; 15—Back; 16—Hip or Hipbone; 17—Rump; 18—Thurl; 19—Tail Head; 20—Pin Bone; 21—Tail; 22—Thigh; 23—Stifle Point; 24—Hock; 25—Switch; 26—Forearm; 27—Chest; 28—Fore Ribs; 29—Back Ribs; 30—Barrel; 31—Flank; 32—Mammary Veins; 33—Udder; 34—Teats.

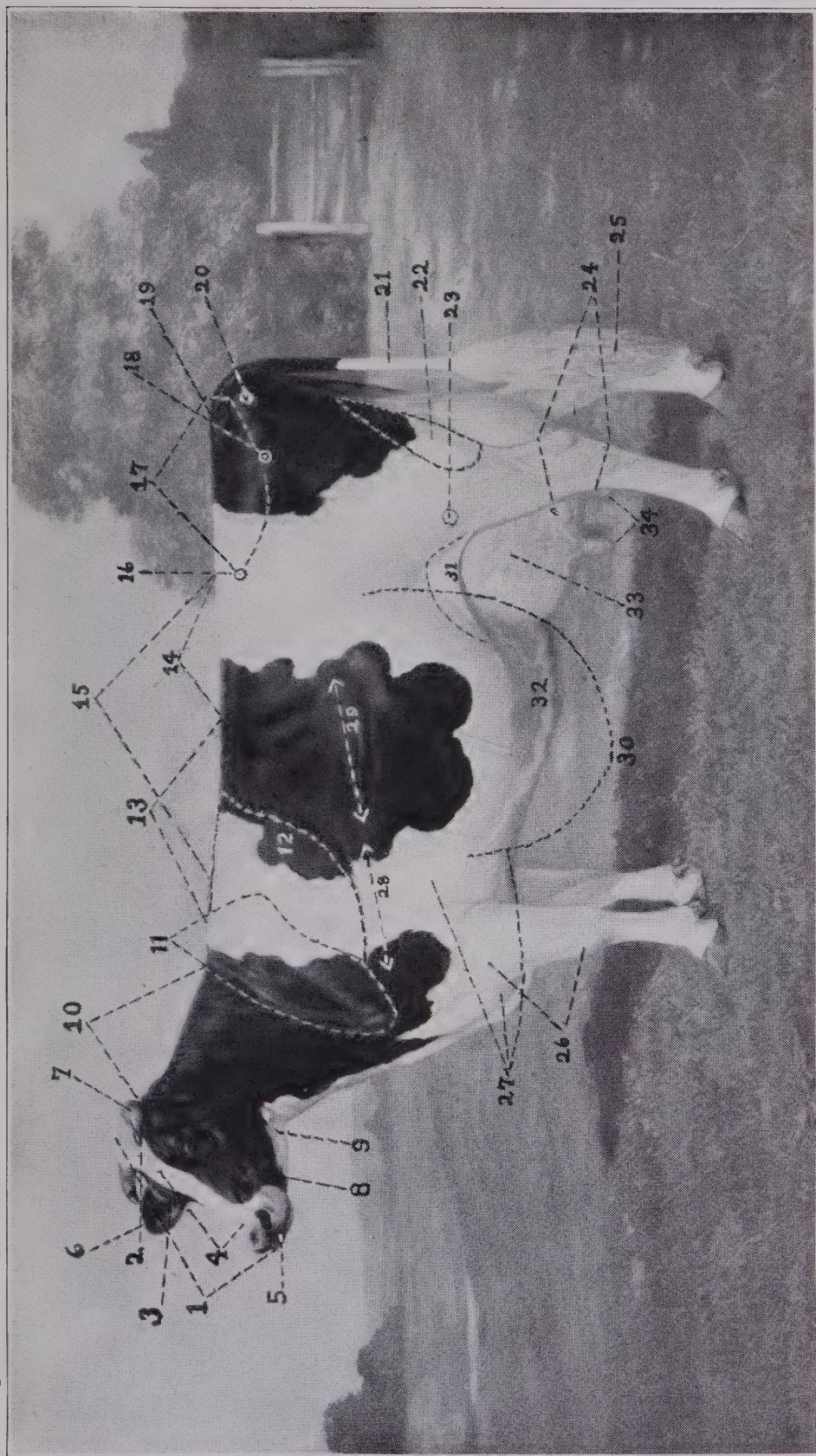


Diagram Showing Parts of the Holstein-Friesian Cow

1—Head; 2—Forehead; 3—Eye; 4—Face; 5—Muzzle; 6—Ear; 7—Horn; 8—Jaw; 9—Throat; 10—Neck; 11—Shoulder; 12—Crops; 13—Chine; 14—Loin; 15—Back; 16—Hip or Hipbone; 17—Rump; 18—Thurl; 19—Tail Head; 20—Pin Bone; 21—Tail; 22—Thigh; 23—Stifle Point; 24—Hock; 25—Switch; 26—Forearm; 27—Chest; 28—Fore Ribs; 29—Back Ribs; 30—Barrel; 31—Flank; 32—Mammary Veins; 33—Udder; 34—Teats.

Elaboration of the Score Card

FOREHEAD—Broad between the eyes; dishing—

The wide forehead is associated with strong constitution. Too great width at poll is associated with coarseness. Dish of forehead indicates breeding; quality; and dairy temperament.

FACE—Of medium length; clean cut; feminine; the bridge of the nose straight—

The face may be too short, or it may be too long. The short blocky face indicates tendency to beefiness and is associated with too short bodied animals. Extreme length or narrowness indicates generally too rangy build, weak constitution and slow developing qualities. The face should be distinctive feminine.

MUZZLE—Broad, with strong lips, nostrils large and open; jaws strong—

Good feeding tendency and constitution are indicated by a broad muzzle. The lines from face into muzzle should be flaring.

EARS—Of medium size; of fine texture; well carried—

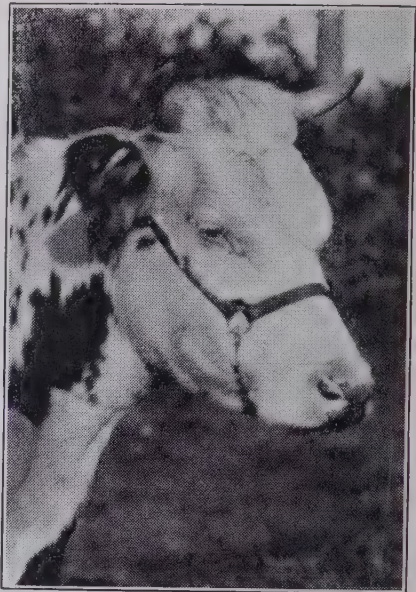
The thin ear carried alert indicates quality. The lop or carelessly carried ear indicates a lack of vitality.

EYES—Large; full; mild; bright—

Bright, full eyes indicate health and vigor. The setting should be prominent, but not bulging.



The True Type Head.



A Coarse Head.



Head Lacks Character Throughout. Note the Sunken Eye.



EDWIN MEGARGE
1922

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HOLSTEIN-FRIESIAN BULL
True Type

HORNS—Small; tapering finely towards the tips; set moderately narrow at base; inclining forward; well curved inward—

The beauty of the head and general appearance of quality can be made or marred by the size and shape of the horn. A firm, clean, healthy appearing horn usually denotes the same characteristics of the bones.

NECK—Long; fine and clean at junction with the head; evenly and smoothly joined to shoulders—

Length of neck is associated with length of body. The short neck accompanies a tendency to beefiness.

SHOULDER—Slightly lower than the hips; smooth and rounding over tops; moderately broad and full at sides—

The coarse, flat topped shoulder is associated with lack of milking qualities. Preceding first lactation period, heifers in good condition appear heavy over shoulder, reducing to proper width after freshening. Too fine shoulder indicates lack of ruggedness.

CROPS—Full; level with the shoulders—

Fullness of crops accompanies good spring of rib and well held up body. Depression back of shoulder is associated with a weak back and lack of constitution.

CHINE—Straight; strong; broadly developed, with open vertebrae—

Widely spaced and prominent spinal processes indicate dairy temperament.



The True Type Neck and Shoulders.



An Example of Undesirable Neck.



Weak in the Crops. A Poor Shoulder.

LOIN AND HIPS—Broad; level or nearly level between the hipbones; level and strong laterally; spreading from chine broadly and nearly level; hipbones fairly prominent—

The low, narrow loin is associated with the weak back. A broad, level loin strengthens the back and supports the reproductive and milk producing organs. A broad prominent hip indicates strong feminine characteristics.

RUMP—Long; broad with roomy pelvis; nearly level laterally; full above the thurls; carried out straight to tail head—

The underline of the udder tends to parallel the line of the rump. The length of the rump largely determines the length of the udder. The broad level rump is associated with a broad level udder.

PINBONES—Wide between; nearly level with hips—

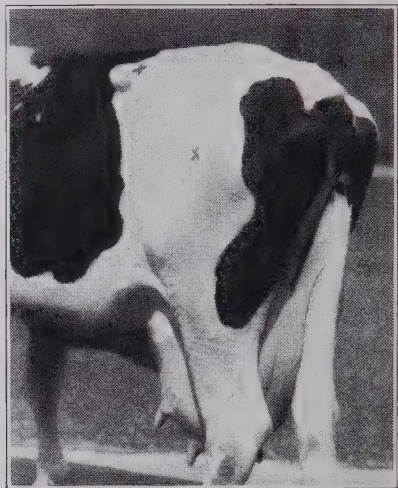
Narrowness at pinbones makes parturition more difficult and tends to narrowness of rear attachment of udder.

THURLS—High; broad through—

High and broad thurls provide roominess in the pelvic region.



Rear Parts of the True Type Cow.



Note the Crosses on Hipbone and Thurl. Compare with True Type Diagram, Page 15. Sloping Rump, Poor Udder.



Rear View of Sloping Rump. Compare with Illustration Top Page 20.

TAIL HEAD AND TAIL—Strong at base without coarseness; the setting well back; tail long, tapering finely to a full switch—

Coarseness at tail head indicates lack of quality throughout.

CHEST—Deep; wide; well filled and smooth in the brisket; broad between the forearms; full in the foreflanks—

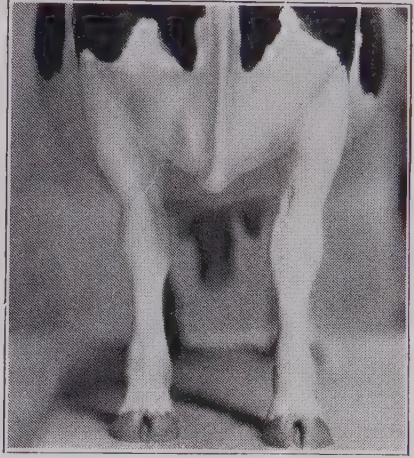
Constitution is primarily dependent on breadth between and just back of forelegs as the organs of respiration and circulation are located in the chest cavity.

BARREL—Long; deep; well rounded; strongly and trimly held up—

The capacity of the animal to utilize feed is largely proportional to its body capacity. Length, depth and breadth of body indicate this capacity. The degree of spring of rib constitutes the breadth of the body, while the length of the rib indicates its depth.

FLANKS—Deep; full—

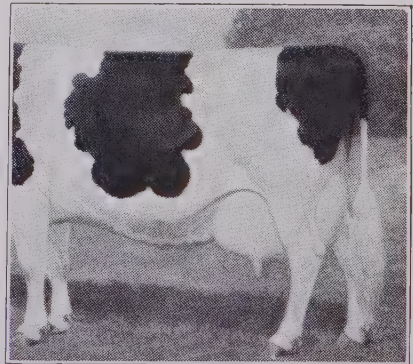
* Fullness of flanks indicates high development of the digestive system. The cow with a shallow, drawn-in flank is usually a light feeder.



The True Type Chest. Note Breadth Between Forearms.



A Narrow Weak Chest—No Width Between and Back of Forelegs.



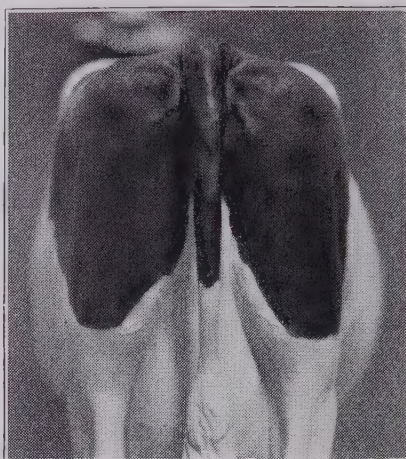
The True Type Barrel, and Mammary Veins.

THIGHS—Wide; deep; straight behind; wide and moderately full at the outsides; twist well cut out and filled with development of udder; with escutcheon well defined—

To afford strength the muscular development on the thigh should be full and deep on the outer surface. The twist or inner thigh should be well cut out, affording room for a wide udder attachment.

MAMMARY VEINS—Large; tortuous; entering large orifices or double extension; with additional developments, such as branches and connections entering numerous orifices—

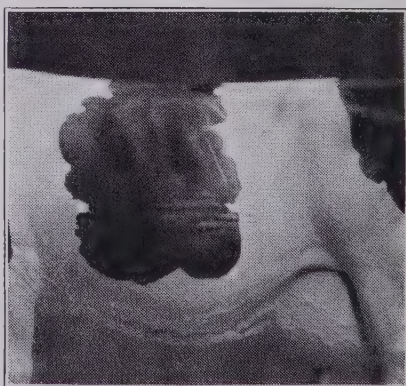
The mammary veins found on both sides of the abdomen are an indication of milk producing tendency. They are the major part of the veining system which carries the blood from the udder back to the heart and lungs. A well developed network of these veins denotes that a large quantity of blood has supplied the milk secreting glands. The mammary veining system develops in varying degrees with each lactation period. The extension of veins on the chest, double branching and a center vein are degrees of development generally found only in the mature animal, but may be indicated in the case of a heifer. A network of veins on the surface of the udder indicates a high development of the circulatory system in the udder.



Rear View of the True Type Cow. Note Width at Pin Bones, Tail Setting and How the Inner Thigh is Cut Out.



Legs too Close Together. No Room for Udder. Same Animal as Bottom Page 18.



Closer View of the True Type Mammary Veins and Barrel.

UDDER—Capacious; flexible; quarters even and of uniform texture; filling the space in the rear below the twist; extending well forward; broad and well attached—

The udder should be capacious, strongly attached to the body and extend well up behind and far forward. The quarters should be even in size, smoothly joined at sides and but slightly grooved between the right and left half. The texture of the udder should be fine, uniformly pliable and free from meatiness, leaving only the appearance of folds of skin after milking or when the cow is dry.

TEATS—Well formed; plumb; of convenient size; properly placed—

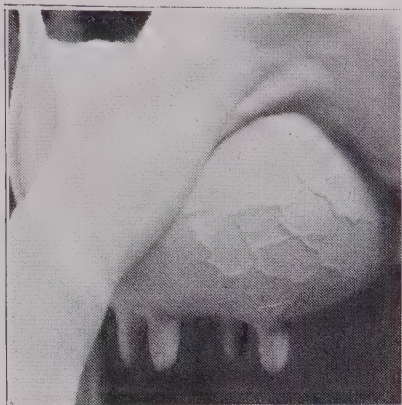
Rear and fore teats should be attached on the same level in proper and even distance apart on each side of the udder. They should hang plumb and be of convenient size.

LEGS—Medium length; clean; nearly straight; wide apart; firmly and squarely set under the body; arms wide, strong and tapering—

Close setting of forelegs is associated with the narrow chest. Close setting of rear legs crowds and restricts the room for the udder.

HAIR AND HIDE—Hair healthful in appearance; fine and soft; hide of medium thickness; mellow and loose—

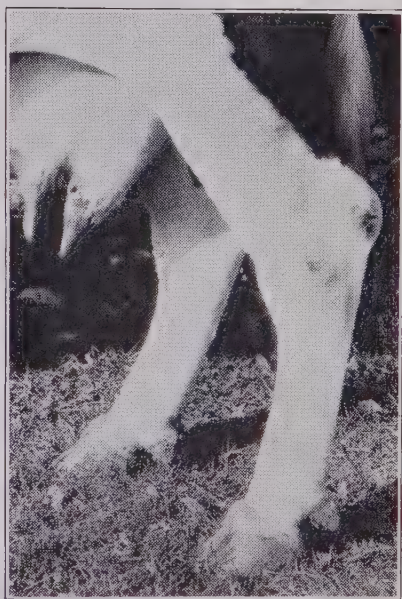
The general health of the animal is indicated by the condition of the hair and hide. The heavy, tight hide and the stiff wiry coat of hair indicate lack of quality or ill health.



True Type Udder and Teats.



Teats Poorly Placed, Small. Poor Udder.



Teats too Close, Legs Not Straight. An example of Sickle Hock.

Indications of Sex Character.

At birth the general body conformation of the bull and the heifer calf is not widely divergent, but as these approach breeding age they begin to differ in conformation, the result of sex character. The poorly developed bull calf at six to nine months of age still looks effeminate. Heifers weak in sex characteristics are more inclined in appearance toward the steer. This condition indicates that much of the difference which assumes shape as between the sexes, is to be associated with the development of the reproductive organs.

The change which takes place in the head is that the face of the heifer grows finer and more effeminate and the male wider and more masculine. In the rear parts, the heifer grows toward a greater prominence of hips, deeper and fuller flanks and begins the development of the milk glands. In contrast the bull takes on a development of crest and increased masculinity in the fore parts. In the event of spaying a heifer or castrating a bull calf, the resultant type and temperamental characteristics become remarkably alike.

The close association of these conformation changes with the development of the organs of reproduction is thus indicated:

The Head. The head of the bull is comparatively broader and shorter than that of the cow. It is characteristic in the male for the hide and hair to be coarse and heavy over the eye and on the forehead. In the female, the head grows increasingly refined as maturity approaches.

Crest. The most distinctive feature of type indicating masculinity in the bull is the crest, which begins to develop as the animal approaches serviceable age and continues to expand in size until maturity. The ideal crest, therefore, is one that is pronounced. A large coarse neck, however, does not necessarily indicate masculinity.

The muscles which develop at breeding age, forming the crest, should be well defined and stand out, but the general neck conformation should not share in this enlargement. The crest that extends close up to the head or back to the shoulder or top line is coarse.

Horns. To indicate masculinity the horns of the bull should be comparatively straight, short and heavy, while in the cow feminine character is indicated by a finer, longer and gracefully curved horn.

Rudimentaries. Well placed rudimentary teats in a bull are indicative of the probable placement of teats and formation of udders in his offspring. Their value as a point to consider in judging is not that the size or their mere presence indicates the tendency in milk production, but that their placing and shape and uniform size does indicate probable conformation of udder and teat placement in the offspring. Some bulls have only slight spots indicating rudimentary teats. Furthermore, rudimentary teats are equally as well developed in beef as in dairy breeds. The desirable placing is anterior to and entirely free from the scrotum. They should be wide apart, uniform in size, and attached on a level plane.

